

L4 ANSWER 3 OF 8 CAPLUS COPYRIGHT 2008 ACS on STN  
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 TITLE: Pyridoxine-5'- $\beta$ -D-glucoside affects the metabolic utilization of pyridoxine in rats  
 AUTHOR(S): Gilbert, Joyce A.; Gregory, Jesse F., III  
 CORPORATE SOURCE: Food Sci. Hum. Nutr. Dep., Univ. Florida, Gainesville, FL, 32611-0163, USA  
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 AB A major form of vitamin B-6 in plant-derived foods is pyridoxine-5'- $\beta$ -D-glucoside. Previous studies have shown that pyridoxine-5'- $\beta$ -D-glucoside is poorly available as a source of vitamin B-6 in rats and is partially utilized in humans. This research was conducted to determine whether unlabeled pyridoxine-5'- $\beta$ -D-glucoside affects the metabolic utilization of simultaneously administered isotopically labeled pyridoxine in rats. Three groups of rats were administered a single oral dose of 0, 36, or 72 nmol of unlabeled pyridoxine-5'- $\beta$ -D-glucoside along with 166.5 MBq (240 nmol) of [ $^{14}$ C]pyridoxine. Twenty-four hours after administration of the dose the rats were killed, and the isotopic distribution of vitamin B-6 metabolites in liver and urine was determined. Urinary  $^{14}$ C and hepatic  $^{14}$ C-labeled pyridoxine phosphate and pyridoxal phosphate were directly related to pyridoxine-5'- $\beta$ -D-glucoside dose. Hepatic  $^{14}$ C,  $^{14}$ C-labeled pyridoxal, pyridoxine and pyridoxamine, and the concentration of urinary [ $^{14}$ C]4-pyridoxic acid, relative to total urinary  $^{14}$ C, were inversely proportional to the dose of pyridoxine-5'- $\beta$ -D-glucoside. These results provide evidence that pyridoxine-5'- $\beta$ -D-glucoside quant. alters the metabolism and in vivo retention of [ $^{14}$ C]pyridoxine and that pyridoxine-5'- $\beta$ -D-glucoside may retard the utilization of nonglycosylated forms of vitamin B-6.  
 IT 72551-78-1  
 RL: BIOL (Biological study)  
 (pyridoxine metabolic utilization response to dietary)  
 RN 72551-78-1 CAPLUS  
 CN  $\beta$ -D-Glucopyranoside, 4,5-bis(hydroxymethyl)-2-methyl-3-pyridinyl (9CI) (CA INDEX NAME)

Absolute stereochemistry.

